FinTech: Business, Data, Analytics

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Overview

Technology is playing an increasingly dominant role in the financial service industry, empowering existing players and threatening to obliviate business models of entire sectors within the industry. The course exposes students to this fast-growing and exciting intersection between technology and finance while emphasizing the role data and analytics play.

The course is focused on three main FinTech areas in which technology is driving changes in the way financial services are provided: (i) Lending/Banking services, (ii) Clearing (iii) Trading. It provides specific coverage and examples of developments from (1) peer-to-peer lending, (2) blockchain and distributed ledgers, (3) networks and their use in trading, and (4) algo trading and its use of non-standard inputs. In each of these areas, we start by analyzing the marketplace, the incumbents, and the business case and strategies of the incoming technology-based players with emphasis on the role data and analytics play. Guest speakers augment the discussion by offering their perspective on future trends in each of these areas.

The course mixes standard lecture, a large number of examples and cases, student presentations, and group projects. Student are expected to work in teams and demonstrate a high level of independent learning and initiative. The course' goal is to provide students with in-depth understanding of how to integrate these disruptive technologies into new business ideas and become intrapreneurs and entrepreneurs.

Programming skills are not required but are helpful. Throughout the course, we will be using R to handle and analyze data. Students will be assumed to acquire basic R skills by reviewing supplied materials and/or attending an optional review session.

Grades

Grades will be determined based on:

(I) **Individual assignments (three) — 30%**

The individual assignments require integration of business and analytics, each corresponding with a main course module. The assignments are designed to help you apply the tools discussed in class to real-world applications. They are deliberately short and they will be graded on 0 (assignment not submitted), 2 (the quality of answers is well below expectations), 4 (the answers are good but incomplete), and 5 (the answers are very good) . Assignments' due dates are:[1]

- Assignment I is due on 11/14/16.
- Assignment II is due on 11/28/16.
- Assignment III is due on 12/12/16.

(II) **Final group project — 70%**

The final group project is an opportunity to apply the knowledge and tools covered in the course to an original business idea developed by your group. Groups will present their ideas on the last class and hand in a proposal for business idea in the format outlined below, which is similar to a pitch deck one would use with seed investors.

Grades within the group will be distributed based on members' assessment of each others' contribution. Specifically, at the end of the course, each group member will allocate 100 contribution points across the other group members. This allocation will remain private.

The final project report is due on 12/16/16.

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[1] Late submissions will not be accepted.

Structure of the final group project

The final group project should be structured as a word document.

Your group project outlining your FinTech venture idea should cover the following points:

1. Venture goal
2. Problem your venture is solving
3. Solution you are building
4. Market size
5. Technology & Product
6. Competition
7. Business model (how do you plan on making money)
8. Customer acquisition
9. Role of regulation

Your final group assignment project grade is determined based on the following criteria:

- 10% quality of the presentation
- 25% innovativeness of the venture
- 25% analysis of the industry and the strategy of existing and potential competitors
- 25% defensibility of the business model
- 15% integration of data and analytics into the venture

Preliminary Meetings' Outline[2]

Class	Date	Topic	Case & papers
Overview			
1	10/24/16	Course overview Primer on financial intermediation	(1) JP Morgan Chase Letter to Shareholders (2) JP Morgan Chase MD&A (3) Has the US Finance Industry Become Less Efficient?
2	10/26/16	What is FinTech and why now?	
Lending			
3	10/31/16	Consumer credit in the US Overview of the P2P lending market Lending Club: business model and credit rating	(1) An Introduction to Consumer Credit (2) Peer-to-Peer Crowdfunding: Informational & the Potential for Disruption in Consumer Lending (3) Lending Club (4) Lending Club: Time to Join?
4	11/02/16	Estimating credit models in R	(1) Lending Club loan-level data
5	11/7/16	P2P Loans from an investors' perspective	
6	11/9/16	*Guest speaker*	
Clearing			
7	11/14/16	Blockchain — cryptography, network, and incentives	
8	11/16/16	Ledger architectures and applications	(1) BitGold: Turning Digital Currency into Gold? (2) R3 CEV
9	11/21/16	*Guest speaker*	

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[2] In addition, an optional recitation session with examples on data manipulation and analytics examples will be held during the first two weeks of the course.

Class	Date	Topic	Case & papers
Trading			
10	11/28/16	Introduction to quantitative trading Selling information: building business that collect and analyze non-standard datasets for trading	Ravenpack Estimize StockTwits
11	11/30/16	Machine learning — intuition and applications to text data in R	
12	12/05/16	*Guest speaker*	
Wrap-up			
13	12/07/16	*Final project group presentations*	